REMARKS

In response to the Office Action mailed July 28, 2005, Applicants respectfully request reconsideration. Claims 1-65 were previously pending in the application. By this amendment, Applicants are canceling claims 12, 40, 58, 61 and 63 without prejudice or disclaimer. Claims 1, 13, 14, 17, 29, 41-45, 57, 60, 62, and 65 have been amended. No new claims have been added. As a result, claims 1-11, 13-39, 41-57, 59, 60, 62, 64, and 65 are pending for examination with claims 1, 24, 29, 53, 57, 59, 60, 62, 64, and 65 being independent. The application is believed to be in condition for allowance.

Allowable Subject Matter

Applicants note with appreciation the indication of allowable subject matter in claims 15-18, 24-28, 43-36, 52-56, 59, and 64.

Rejections under 35 U.S.C § 101

The Office Action rejects claims 62, 63 and 65 under 35 U.S.C § 101 as being directed towards non-statutory subject matter, specifically a carrier wave. Claims 62 and 65 have been amended to delete the limitation of being "embedded in a carrier wave." Claim 63 has been canceled.

Accordingly, withdrawal of this rejection is respectfully requested.

Summary of Embodiments Of Applicants' Invention

An example of one embodiment of Applicants' invention is described below to highlight some aspects of the invention. This embodiment is described primarily in Applicants' specification at page 4, lines 17-21; page 5, lines 9-10; page 6, line 26 – page 7, line 7, and is also illustrated in Figures 2, 4D and 4E. It should be appreciated that the description below is merely an example of one of many embodiments that fall within the scope of Applicants' claims and is provided merely for the purpose of highlighting some aspects of Applicants' invention.

A system and method is developed wherein objects in memory are assigned a Short Quasi-Unique IDentifier (SQUID) (page 6, line 26 – page 7, line 2). As shown in Figure 2, once a new data object is created from memory 100, a SQUID is created by a SQUID generator 106

(page 7, lines 3-7). Once a SQUID has been created, a memory allocator 104 then generates a pointer to the data object (page 7, line 7). A SQUID is part of the pointer format, which is depicted in Figure 3. Where two different pointers must be compared, a comparator may compare their respective SQUIDs (page 5, lines 9-10).

There are a number of advantages to using SQUIDs over other Unique IDentifiers (UIDs). One such advantage is that SQUIDs allow pointers to different objects to be distinguished quickly, and with high probability (page 4, lines 17-18). Because SQUIDs are not unique (i.e., two pointers comprising the same SQUID value need not point to the same object, as shown in Figures 4D and 4E), they may be shorter than UIDs, comprising only a small number of bits, while still providing similar functionality (page 4, lines 18-20). Furthermore, SQUIDs are more advantageous than UIDs because they do not require the use of translation tables (page 4, lines 20-21).

Rejections under 35 U.S.C § 102 and 35 U.S.C § 103

The Office Action rejects claims 1-4, 6-8, 11, 20, 21, 29-32, 34-36, 39, 48, 49, 57, 60, and 62 under 35 U.S.C. § 102(b) as being anticipated by Wolczko et al., U.S. Patent No. 5,900,001 (Wolczko). The Office Action also rejects, under 35 U.S.C. § 103(a), claims 23 and 51 as being unpatentable over Wolczko; claims 5 and 33 as being unpatentable over Wolczko in view of Black, U.S. Patent No. 5,325,524; claims 9 and 37 as being unpatentable over Wolczko in view of DiLullo, U.S. Application No. 20020175805; claims 10 and 38 as being unpatentable over Wolczko in view of Armstrong , U.S. Patent No. 5,025,253; claims 19 and 47 as being unpatentable over Wolczko in view of Carter, U.S. Patent No. 5,845,331; and claims 12, 14, 22, 40-42, 50, 58, 61, and 63 as being unpatentable over Wolczko in view of Beier, U.S. Patent No. 5,933,820 (Beier). Applicants respectfully traverse these rejections.

Applicants note independent claims 1, 29, 57, 60, and 62 have been amended to include the limitations of canceled claims 12, 40, 58, 61, and 63, respectfully. Therefore, the rejection over Wolczko in view of Beier will now be discussed.

Discussion of Wolczko and Bier:

Wolczko describes a data structure and associated processes that optimize garbage collection techniques (abstract). In the system described by Wolczko, once a node, memory allocated from a heap, is created the address of the node is contained in a node pointer (Col. 15, lines 59-63). A hash value, quasi-unique integer, is also generated for the node (Col. 15, lines 44-46).

Beier describes a database management system (DBMS). During operation, if the DBMS reaches data element 111 and wants to access a twin data segment 161, the DBMS looks at a partition id 144 for the twin data element 161 in a pointer set 140, as shown in Figure 1a and 1c (Col. 11, lines 3-7). The partition id is used to look up in memory a table, which contains a reorganization number that is associated with the partition id (Col 6, lines 7-9). A reorganization number is a counter which is increased whenever the data is moved (Col. 9, lines 55-29). The DBMS then compares the reorganization number in memory for that partition with the reorganization number 150 in the pointer set 140 (Col. 11, lines 15-17). Thus, if the reorganization number 150 matches what is in memory, the DBMS can use the direct pointer 142 in the pointer set 140 to get the twin data element 161 (Col. 11, lines 18-20). Therefore, in the system described by Beier, reorganization numbers are compared to see if a direct pointer is valid (Col. 11, lines 20-22).

The Claimed Invention Distinguishes from the Combination of Wolczko and Beier:

The Office Action concedes Wolczko does not teach or suggest a comparator which compares SQUIDs associated with two different pointers and asserts Beier discloses a comparator which compares identifiers associated with two different pointers. The Office Action further asserts identifiers are functionally equivalent to SQUIDs. Applicants respectfully disagree for at least two reasons.

First, Beier does not teach a comparator which compares identifiers associated with two different pointers but instead teaches a system for comparing a reorganization number associated with a pointer set to a reorganization number stored in a table in memory (Col. 11, lines 15-22). Applicants respectfully assert that a reorganization number is not equivalent to an identifier as

the reorganization number is simply used as a counter keeping track of the number of times a data segment has been moved (Col. 9, lines 25-29).

Second, even if Beier did disclose a comparator comparing identifiers associated with two different pointers (which Applicants do not concede), the amended claims would still distinguish over the combination. As discussed above in the Summary of Embodiments Of Applicants' Invention, a SQUID and UID are *not* functionally equivalent as there are many advantages in using SQUIDs rather than UIDs. Specifically, SQUIDs do not require the use of translation tables and SQUIDs are not unique, therefore SQUIDs may be shorter than UIDs, comprising only a small number of bits. Furthermore, one skilled in the art would not be motivated to use SQUIDs in the comparator of Beier since doing so would require a substantial reconstruction and redesign of the Beier system (MPEP § 2143.01).

Discussion of the Claims:

Amended claim 1 requires "a comparator which compares *SQUIDs* associated with two different pointers." The prior art of record does not teach or suggest a comparator which compares *SQUIDs* associated with two different pointers, as recited in amended claim 1. The combination of Wolczko and Beier instead teaches a system that compares reorganization numbers to determine if a direct pointer is valid (Beier, Col. 11, lines 20-22). Thus, amended claim 1 patentably distinguishes from the prior art of record.

Claims 2-11, 13, 14, and 19-23 depend from amended claim 1 and patentably distinguish for at least the same reasons.

Amended claim 29 requires "comparing *SQUIDs* of two different pointers." As should be appreciated from the above discussion relating to claim 1, the prior art of record does not teach or suggest comparing *SQUIDs* of two different pointers, as recited in amended claim 29. Thus, amended claim 29 patentably distinguishes from the prior art of record.

Claims 30-39, 41, 42, and 47-51 depend from amended claim 29 and patentably distinguish for at least the same reasons.

Amended claim 57 requires a "means for comparing *SQUIDs* of two different pointers." As should be appreciated from the above discussion relating to claim 1, the prior art of record does not teach or suggest a means comparing *SQUIDs* of two different pointers, as recited in

amended claim 57. Thus, amended claim 57 patentably distinguishes from the prior art of record.

Amended claim 60 requires a step which "compares *SQUIDs* of two different pointers." As should be appreciated from the above discussion relating to claim 1, the prior art of record does not teach or suggest a step which compares *SQUIDs* of two different pointers, as recited in amended claim 60. Thus, amended claim 60 patentably distinguishes from the prior art of record.

Amended claim 62 requires "a program code segment for comparing *SQUIDs* of two different pointers." As should be appreciated from the above discussion relating to claim 1, the prior art of record does not teach or suggest a program code segment comparing *SQUIDs* of two different pointers, as recited in amended claim 62. Thus, amended claim 62 patentably distinguishes from the prior art of record.

Accordingly withdrawal of these rejections are respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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